

Review of Data from A Mixed Analyte Performance Evaluation Program
Operated by the United States Department of Energy

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Rapid market swings within environmental analytical laboratories and increasing regulatory requirements necessitate that regulatory driven, quantitative analyses performed for the Office of Environmental Management (EM) of the United States Department of Energy include nonradioactive compounds and elements in addition to the typical radioactive isotopes of interest. To assist in addressing quality assurance issues in today's environmental analytical laboratory market, the Office of Transportation, Emergency Management and Analytical Services (EM-76) established a Performance Evaluation Program that met the expanded goals established for environmental protection.

The Mixed Analyte Performance Evaluation Program (MAPEP) has been in operation since May 1994, as a result of a memorandum from the Assistant Secretary for EM defining the MAPEP, and requiring participation by contracted environmental analytical facilities performing analyses, and reporting the results and uncertainties.

The Radiological and Environmental Sciences Laboratory at the Idaho National Engineering Laboratory prepares performance evaluation standards consisting of matrix materials designed to evaluate the ability and quality of pertinent environmental analytical measurements. The samples contain environmentally important and compliance required target analytes of hazardous and radioactive (mixed) character. The MAPEP is conducted on a semiannual basis, with distribution dates on January 1 and July 1. Three months are allowed for the analysis of constituents not otherwise regulated by holding times. The samples are extensively characterized before distribution to assure homogeneity and concentration values. A report is generated at the conclusion of each round. The participants are not ranked or scored, but each participant is apprised of their performance in relation to the characterization criteria established for that round.

The data captured by MAPEP consists not only of the analytical data, but also sample size, analytical methodology and uncertainties associated with all analytical measurements. A review of the data captured thus far will be presented with emphasis on some of the more curious observations in the analytical data.